

WHAT IS CLAIMED IS:

1. Circuitry for providing a supply voltage to an operational amplifier, comprising:  
a switch having a plurality of inputs connected to a respective plurality of supply voltages, and an output connected to a supply voltage terminal of the operation amplifier, wherein the input of the switch is selected in dependence on the voltage level to which a signal is to be amplified.
2. Circuitry according to claim 1 further comprising a digital to analogue converter for receiving digitised values and for generating a corresponding analogue signal for amplification by the operational amplifier.
3. Circuitry according to claim 2 wherein the input of the switch is selected in dependence on the digitised values.
4. Circuitry according to claim 3 wherein the input of the switch is selected in dependence on the peak digitised value.
5. Circuitry according to claim 3 wherein the input of the switch is selected in dependence on the average digitised value.
6. Circuitry according to claim 2 wherein the input of the switch is selected by a control signal generated in dependence on the digitised values.
7. Circuitry according to claim 4 wherein the digitised values are stored in the digital to analogue converter.
8. Circuitry according to claim 1, wherein the switch has a first and a second input connected to respective first and second supply voltages, the first supply voltage being lower

than the second supply voltage, wherein the input of the switch is selected to be the second input if the voltage level to which the signal is to be amplified exceeds a predetermined level.

9. Circuitry for providing a supply voltage to an operation amplifier according to any claim 1, comprising:

a further switch having a plurality of inputs connected to a respective plurality of further supply voltages, and an output connected to a further supply voltage terminal of the operational amplifier, wherein the input of the further switch is selected in dependence on the voltage level to which the signal is to be amplified.

10. An xDSL modem including circuitry according to claim 1.

11. A method of providing a supply voltage to an operational amplifier, comprising the steps of:

providing a plurality of supply voltages; selecting one of the supply voltages in dependence on the voltage level to which a signal is to be amplified; and

connecting the selected one of the plurality of supply voltages to a supply voltage terminal of the operational amplifier.

12. The method of claim 11 further comprising the step of converting digitised values into an analogue signal for amplification by the operational amplifier.

13. The method of claim 12 wherein the step of selecting one of the supply voltage is dependent upon the digitised values.

14. The method of claim 13 wherein the step of selecting one of the supply voltages is dependent upon the peak digitised value.

15. The method of claim 13 wherein the step of selecting one of the supply voltages is dependent upon the average digitised value.

16. The method of claim 12 wherein the step of selecting includes generating a control signal in dependence on the digitised values.

17. The method according to claim 11 in which there is provided a first and a second supply voltage, the first supply voltage being lower than the second supply voltage, wherein the second supply voltage is selected if the voltage level to which the signal is to be amplified exceeds a predetermined level.

18. A method of providing a supply voltage to an operational amplifier according to claim 11 comprising the steps of:

- providing a plurality of further supply voltages;

- selecting one of the further supply voltages in dependence on the voltage level to which a signal is to be amplified; and

- connecting the selected one of the plurality of further supply voltages to a further supply voltage terminal of the operational amplifier.

19. A method of providing a supply voltage to an operational amplifier of an xDSL modem according to claim 11.